CLAIMS

We claim:

1. A method of treating systemic lupus erythematosus (SLE) in an individual, comprising administering to the individual a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more double stranded DNA (dsDNA) epitopes which specifically bind to an antibody from the individual which specifically binds to double stranded DNA, wherein affinity of the dsDNA epitope for the antibody from the individual is used as a basis for selecting the individual to receive or continue to receive the treatment.

2. The method of claim 1, wherein the dsDNA epitopes are polynucleotides.

3. The method of claim 2, wherein the polynucleotides are double stranded DNA.

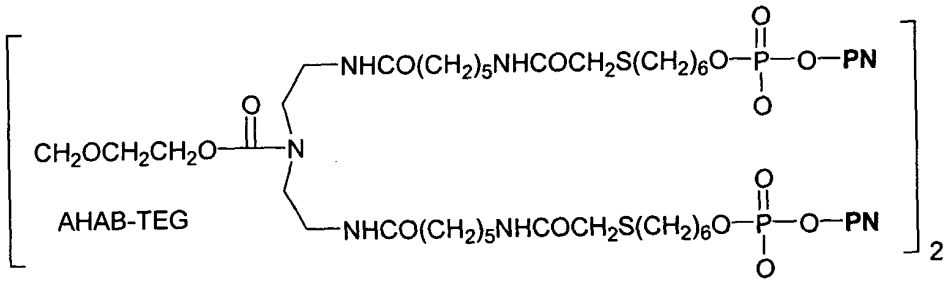
4. A method of treating SLE in an individual, comprising administering to the individual a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more polynucleotides which specifically bind to an antibody from the individual which specifically binds to double stranded DNA, said polynucleotide consisting essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3', wherein the apparent equilibrium dissociation constant (K_D') for the polynucleotide with respect to the antibody from the individual before or upon initiation of treatment is less than about 1.0 mg IgG per ml, and wherein said K_D' value or a functional equivalent thereof is used as a basis for selecting the individual to receive the treatment.

5. The method of claim 4, wherein the K_D' is less than about 0.8.

6. The method of claim 4, wherein the K_D' is less than about 0.5.

7. The method of claim 4, wherein the K_D' is less than about 0.2.

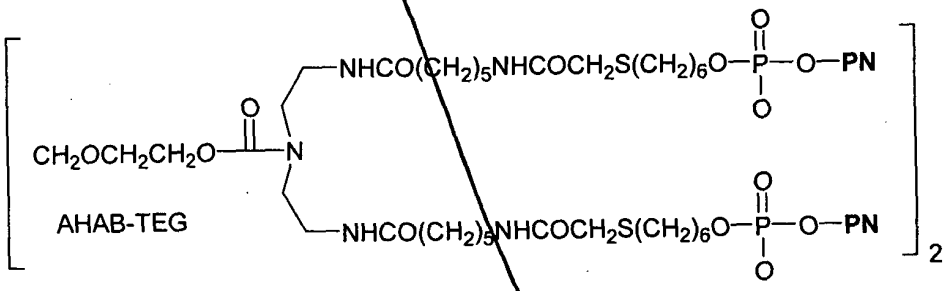
8. The method of claim 4, wherein the platform molecule is



wherein PN is the polynucleotide.

9. The method of claim 5, wherein the polynucleotide consists of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

10. The method of claim 9, wherein the platform molecule is



wherein PN is the polynucleotide.

11. The method of claim 9, wherein the K_D' is less than about 0.5.

12. A method of treating SLE in an individual comprising:

(a) assessing affinity of an anti-double stranded DNA antibody from the individual with respect to a dsDNA epitope which is to be used in treatment, wherein the individual is selected for treatment based on said antibody affinity; and

(b) administering to said selected individual a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more of the dsDNA epitopes.

13. The method of claim 12, wherein the dsDNA epitope is a polynucleotide.

14. The method of claim 13, wherein the polynucleotide is double stranded DNA.

15. A method of treating SLE in an individual, comprising

(a) assessing before initiation of treatment an apparent equilibrium dissociation constant (K_D') or a functional equivalent thereof for a polynucleotide in a conjugate an antibody from the individual which specifically binds to double stranded DNA, said conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more polynucleotides which specifically bind to an antibody from the individual which specifically binds to double stranded DNA, said polynucleotide consisting essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3', wherein the individual is selected to receive the treatment if the K_D' is less than about 1.0 mg IgG per ml; and

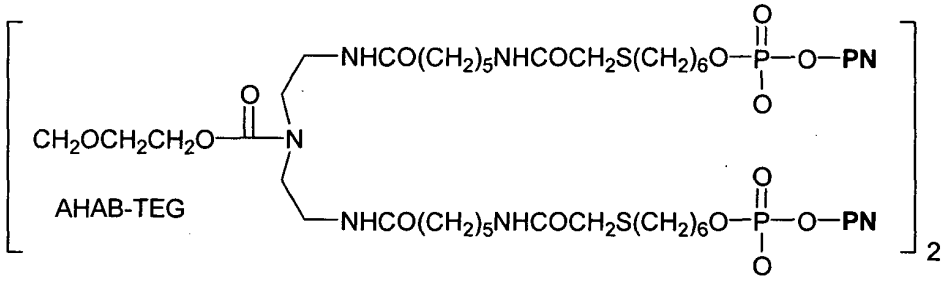
(b) administering to the individual the conjugate in an amount sufficient to increase the K_D'.

16. The method of claim 15, wherein the K_D' is less than about 0.8.

17. The method of claim 15, wherein the K_D' is less than about 0.5.

18. The method of claim 15, wherein the K_D' is less than about 0.2.

19. The method of claim 15, wherein the platform molecule is



wherein PN is the polynucleotide.

20. The method of claim 19, wherein the K_D' is less than about 0.8.

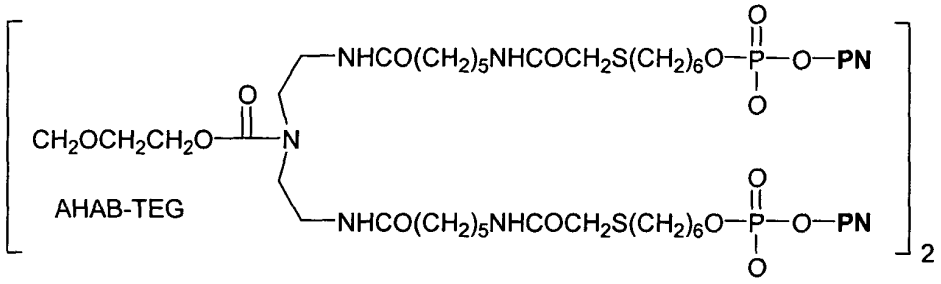
21. A method of treating lupus nephritis in an individual comprising administering to the individual a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more dsDNA epitopes which specifically bind to an antibody from the individual which specifically binds to double stranded DNA.

22. The method of claim 21 wherein the dsDNA epitopes are polynucleotides.

23. The method of claim 22 wherein the polynucleotide consists essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

24. The method claim 22 wherein the polynucleotide consists of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

25. The method claim 24 wherein the platform molecule is



wherein PN is the polynucleotide.

26. The method of claim 23 wherein the conjugate is administered in an amount sufficient to reduce incidence of renal flares in the individual.

27. The method of claim 23 wherein the conjugate is administered in an amount sufficient to reduce the amount of corticosteroid or cyclophosphamide administered to the individual.

28. The method of claim 21 wherein affinity of the dsDNA epitope for the antibody from the individual is used as a basis for selecting the individual to receive the treatment.

29. The method of claim 23 wherein affinity of the polynucleotide for the antibody from the individual is used as a basis for selecting the individual to receive the treatment.

30. The method of claims 23 or 24 wherein the wherein the apparent equilibrium dissociation constant (K_D') or functional equivalent thereof for the polynucleotide of the conjugate with respect to the antibody from the individual before or upon initiation of treatment is less than about 1.0 mg IgG per ml or a

functional equivalent thereof, and wherein said K_D' value or functional equivalent thereof is used as a basis for selecting the individual to receive the treatment.

31. The method of claim 30 wherein the K_D' is less than about 0.8.

32. The method of claim 29, wherein the conjugate is administered in an amount sufficient to reduce the affinity.

33. A method of treating SLE in an individual, comprising: (a) assessing before or upon initiation of treatment an apparent equilibrium dissociation constant (K_D') for a dsDNA epitope in or of a conjugate and an antibody from the individual which specifically binds to double stranded DNA, said conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more said epitopes which specifically bind to an antibody from the individual which specifically binds to double stranded DNA and (b) administering to the individual the conjugate in an amount sufficient to increase the K_D', wherein treatment is continued if K_D' is increased at least about 20% compared to K_D' before or upon initiation of treatment.

34. The method of claim 33, wherein the dsDNA epitopes are polynucleotides.

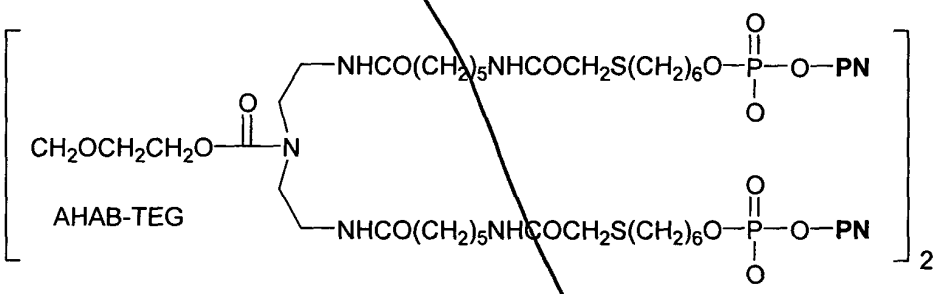
35. The method of claim 34, wherein the polynucleotides consist essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

36. The method of claim 34, wherein the polynucleotides consist of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

37. The method of claims 35 or 36 wherein the treatment is continued if K_D' is increased at least about 50% compared to K_D' before or upon initiation of treatment.

38. The method of claims 35 or 36 wherein the treatment is continued if K_D' is increased at least about 100% compared to K_D' before or upon initiation of treatment.

39. The method of claim 36 wherein the platform molecule is



wherein PN is the polynucleotide.

40. A method of monitoring treatment for SLE in an individual, said treatment comprising administration of a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more dsDNA epitopes which specifically bind to an antibody from the individual which specifically binds to double stranded DNA, said method comprising measuring affinity of the antibody from the individual with respect to the dsDNA epitopes used in said treatment.

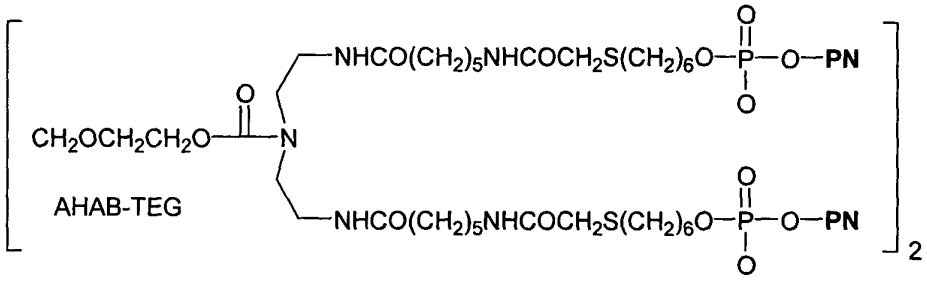
41. The method of claim 40 wherein the affinity is measured by measuring the apparent equilibrium dissociation constant (K_D') or functional equivalent thereof for the ds DNA epitope of the conjugate and an anti-double stranded DNA antibody from the individual.

42. The method of claim 41 wherein the dsDNA epitopes are polynucleotides.

43. The method of claim 42 wherein polynucleotides consist essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

44. The method of claim 42 wherein polynucleotides consist of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

45. The method of claim 44 wherein the platform molecule is



wherein PN is the polynucleotide.

46. A method of identifying an individual who may be suitable for treatment for SLE, said treatment comprising administration of a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more polynucleotides which specifically bind to an antibody from the individual which specifically binds to double stranded DNA, said polynucleotide consisting essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3', said method comprising measuring the apparent equilibrium dissociation constant (K_D') or functional equivalent thereof for the polynucleotide of the conjugate before or upon initiation of treatment and anti-double stranded DNA antibodies from the individual, wherein an individual is identified by K_D' of less than about 1.0 mg IgG per ml or a functional equivalent thereof.

47. The method of claim 46, wherein the individual is identified by K_D' of less than about 0.8 mg IgG per ml or a functional equivalent thereof.

48. The method of claim 46, wherein the individual is identified by K_D' of less than about 0.2 mg IgG per ml or a functional equivalent thereof.

49. A method of identifying an individual who may be unsuitable for treatment for SLE, said treatment comprising administration of a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more polynucleotides which specifically bind to an antibody from the individual which specifically binds to double stranded DNA, said polynucleotide consisting essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3', said method comprising measuring the apparent equilibrium dissociation constant (K_D') or a functional equivalent thereof for the polynucleotide of the conjugate and anti-double stranded DNA antibodies from the individual before or upon initiation of treatment, wherein an individual is identified by K_D' of more than about 1.0 mg IgG per ml or a functional equivalent thereof.

50. The method of any of claims 1, 4, 12, 21, 33, 40, 46, or 49, wherein the individual is human.

51. A method of identifying an antibody affinity which may indicate applicability of a treatment for an antibody-mediated pathology, said method comprising (a) measuring affinity of antibodies implicated in the antibody-mediated pathology from each individual in a plurality of individuals, said individuals having an antibody-mediated pathology, said affinity being between said antibodies and an analog of an immunogen implicated in the antibody-mediated pathology; (b)

administering to the plurality of individuals a molecule comprising the analog; (c) correlating the extent of the antibody-mediated pathology with the initial affinity.

52. A kit comprising molecule comprising an epitope which binds to an anti-double stranded DNA antibody in suitable packaging, and further comprising instructions for using the epitope to detect affinity of the epitope for an antibody from an individual which specifically binds to double stranded DNA.

53. The kit of claim 52, wherein the epitope is a polynucleotide.

54. The kit of claim 53, wherein the polynucleotide is DNA.

55. The kit of claim 54, wherein the polynucleotide comprises the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

56. The kit of claim 54, wherein the polynucleotide consists essentially of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

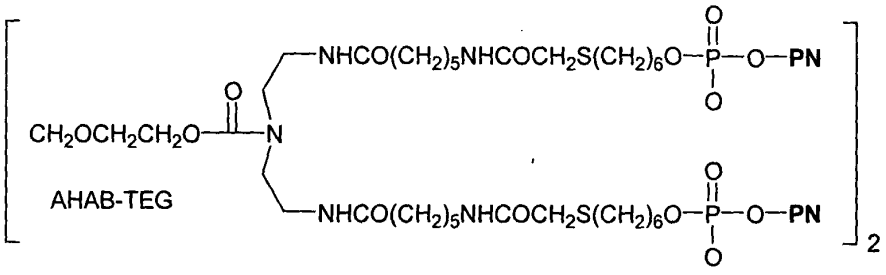
57. The kit of claim 54, wherein the polynucleotide consists of the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3'.

58. The kit of any of claims 55, 56 or 57, wherein the polynucleotide is biotinylated.

59. A kit comprising (1) a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more polynucleotides which specifically bind to an antibody from an individual which specifically binds to double stranded

DNA; and (2) instructions for using the conjugate to detect affinity of the conjugate for anti-ds DNA antibodies from an individual.

60. The kit of claim 59, wherein the conjugate comprises the sequence 5'-GTGTGTGTGTGTGTGTGTGT-3' and the platform



wherein PN denotes polynucleotide.

61. The kit of claims 59 or 60, wherein the polynucleotide is biotinylated.

62. A kit comprising (1) a conjugate comprising (a) a non-immunogenic valency platform molecule and (b) two or more polynucleotides which specifically bind to an antibody from an individual which specifically binds to double stranded DNA; (2) a polynucleotide comprising the polynucleotide of the conjugate; and (3) instructions for using the polynucleotide comprising the polynucleotide of the conjugate to detect affinity of the polynucleotide for anti-ds DNA antibodies from an individual.

63. A kit comprising a molecule comprising an epitope which binds to an antibody implicated in an antibody-mediated pathology and instructions for using the molecule to determine affinity of an antibody implicated in an antibody-mediated pathology with the analog or epitope-containing molecule.

64. The kit of claim 63, wherein the molecule is biotinylated.

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